



## **Supporting Information**

### **Supplementary material**

**This appendix was part of the submitted manuscript and has been peer reviewed.  
It is posted as supplied by the authors.**

Appendix to: Fraile Navarro D, Tendal B, Tingay D, et al. Clinical care of children and adolescents with COVID-19: recommendations from the National COVID-19 Clinical Evidence Taskforce. *Med J Aust* 2021; doi: 10.5694/mja2.51305.

## **Acknowledgements:**

We would like to acknowledge all individual members of the COVID-19 Taskforce: Steering Committee: Sharon McGowan (Chair), Nicola Ballenden, Terri-Lee Barrett, Vanessa Beavis, James Beckford Saunders, Tanya Buchanan, Marina Buchanan-Grey, Dawn Casey, Marita Cowie, Joseph Doyle, Mark Frydenberg, Danijela Gnjidic, Sally Green, Rohan Greenland, Ken Griffin, Stephan Groombridge, Louise Hardy, Alison Hodak, Anthony Holley, Vase Jovanovska, Sabina Knight, Kristin Michaels, Peter Morley, Julia Morphet, Suzi Nou, Phillip Russo, Megan Sarson, Alan Young. Executive Team: Julian Elliott, Rhiannon Tate, Britta Tendal, Sarah Norris, Bronwyn Morris-Donovan, Joshua Vogel, Sharon Gurry, Eloise Hudson, Shauna Hurley, Declan Primmer, Samantha Timms, Susan Whicker. National Guidelines Leadership Group: Julian Elliott (Co-Chair), Sutapa Mukherjee (Co-Chair), Joshua Vogel (Deputy Chair), Jason Agostino, Karen Booth, Lucy Burr, Lyn Byers, Peter Cameron, Megan Cooper, Allen Cheng, Peter Fowler, Mark Frydenberg, Alan Glanville, Caroline Homer, Karin Leder, Steve McGloughlin, Brendan McMullan, Ewen McPhee, Brett Mitchell, Mark Morgan, Paul Myles, Chris O'Donnell, Michael Parr, Jane Phillips, Rebecca Randall, Wayne Varndell, Ian Whyte, Leeroy William. Consumer Panel: Rebecca Randall (Chair), Richard Brightwell, Lynda Condon, Amrita Deshpande, Adam Ehm, Monica Ferrie, Joanne Muller, Lara Pullin, Elizabeth Robinson, Adele Witt. Primary and Chronic Care Panel: Sarah Larkins (Co-Chair), Mark Morgan (Co-Chair), Georgina Taylor (Deputy Chair), Jason Agostino, Paul Burgess, Penny Burns, Lyn Byers, Kirsty Douglas, Ben Ewald, Dan Ewald, Dianna Fornasier, Sabina Knight, Carmel Nelson, Louis Peachey, David Peiris, Mieke van Driel, Lucie Walters, Ineke Weaver. Hospital and Acute Care Panel: Lucy Burr (Chair), Simon Hendel (Deputy Co-Chair), Kiran Shekar (Deputy Co-Chair), Bronwyn Avard, Kelly Cairns, Allan Glanville, Nicky Gilroy, Paul Myles, Robert O'Sullivan, Owen Robinson, Chantal Sharland, Sally McCarthy, Peter Wark. Critical Care Panel: Steve McGoughlin (Co-Chair), Priya Nair (Co-Chair), Carol Hodgson, (Deputy Chair), Melissa Ankravs, Craig French, Kim Hansen, Sue Huckson, Jon Iredell, Carrie Janerka, Rose Jaspers, Ed Litton, Stephen Macdonald, Sandra Peake, Ian Seppelt. Pregnancy and Perinatal Care Panel: Caroline Homer (Co-Chair), Vijay Roach (Co-Chair), Michelle Giles (Deputy Co-Chair), Clare Whitehead (Deputy Co-Chair), Wendy Burton, Teena Downton, Glenda Gleeson, Adrienne Gordon, Jenny Hunt, Jackie Kitschke, Nolan McDonnell, Philippa Middleton, Jeremy Oats. Paediatric and Adolescent Care Panel: Asha Bowen (Co-Chair), Brendan McMullan (Co-Chair), David Tingay (Deputy Co-Chair), Nan Vasilunas (Deputy Co-Chair), Lorraine Anderson, James Best, Penny Burns, Simon Craig, Simon Erickson, Nick Fancourt, Zoy Goff, Vimbai Kapuya, Catherine Keyte, Lorelle Malyon, Danielle Wurzel, Dianne Crellin, Mark Moore. Palliative and Aged Care Panel: Meera Agar (Co-Chair), Richard Lindley (Co-Chair), Natasha Smallwood (Deputy Chair), Mandy Callary, Michael Chapman, Philip Good, Peter Jenkin, Deidre Morgan, Vasi Naganathan, Velandai Srikanth, Penny Tuffin, Elizabeth Whiting, Leeroy William, Patsy Yates. Disease-Modifying Treatment and Chemoprophylaxis Panel: Bridget Barber, Jane Davies, Josh Davis, Dan Ewald, Michelle Giles, Amanda Gwee, Karin Leder, Gail Matthews, James McMahon, Trisha Peel, Chris Raftery, Megan Rees, Jason Roberts, Ian Seppelt, Tom Snelling, Brad Wibrow. Expert Advisory Group: Ross Baker, Jennifer Curnow, Briony Cutts, Anoop Enjeti, Andrew Forbes, Prahlad Ho, Adam Holyoak, Helen Liley, James McFadyen, Zoe McQuilten, Eileen Merriman, Helen Savoia, Chee Wee Tan, Huyen Tran, Chris Ward, Katrina Williams. Cardiac Arrest Working Group: Neil Ballard, Samantha Bendall, Neel Bhanderi, Lyn Byers, Simon Craig, Dan Ellis, Dan Ewald, Craig Fairley, Brett Hoggard, Minh Le Cong, Peter Morley, Priya Nair, Andrew Pearce. Evidence Team: Britta Tendal, Steve McDonald, Tari Turner, Joshua Vogel, David Fraile Navarro, Heath White, Samantha Chakraborty, Saskia Cheyne, Henriette Callesen, Sue Campbell, Jenny Ring, Agnes Wilson, Tanya Millard, Melissa Murano, David Tunnicliffe. Observational Data Working Group: David Henry (Co-Chair), Sallie Pearson (Co-Chair), Douglas Boyle, Kendal Chidwick, Wendy Chapman, Craig French, Chris Pearce, Tom Snelling. Independent Conflicts of Interest Committee: Lisa Bero (Chair), Quinn Grundy, Joel Lexchin, Barbara Mintzes.

We would also like to acknowledge the expert advisory group members for Paediatric Inflammatory Multisystem Syndrome (PIMS-TS) recommendations: David Burgner, Christina Boros, Theresa Cole, Davinder Singh-Grewal.

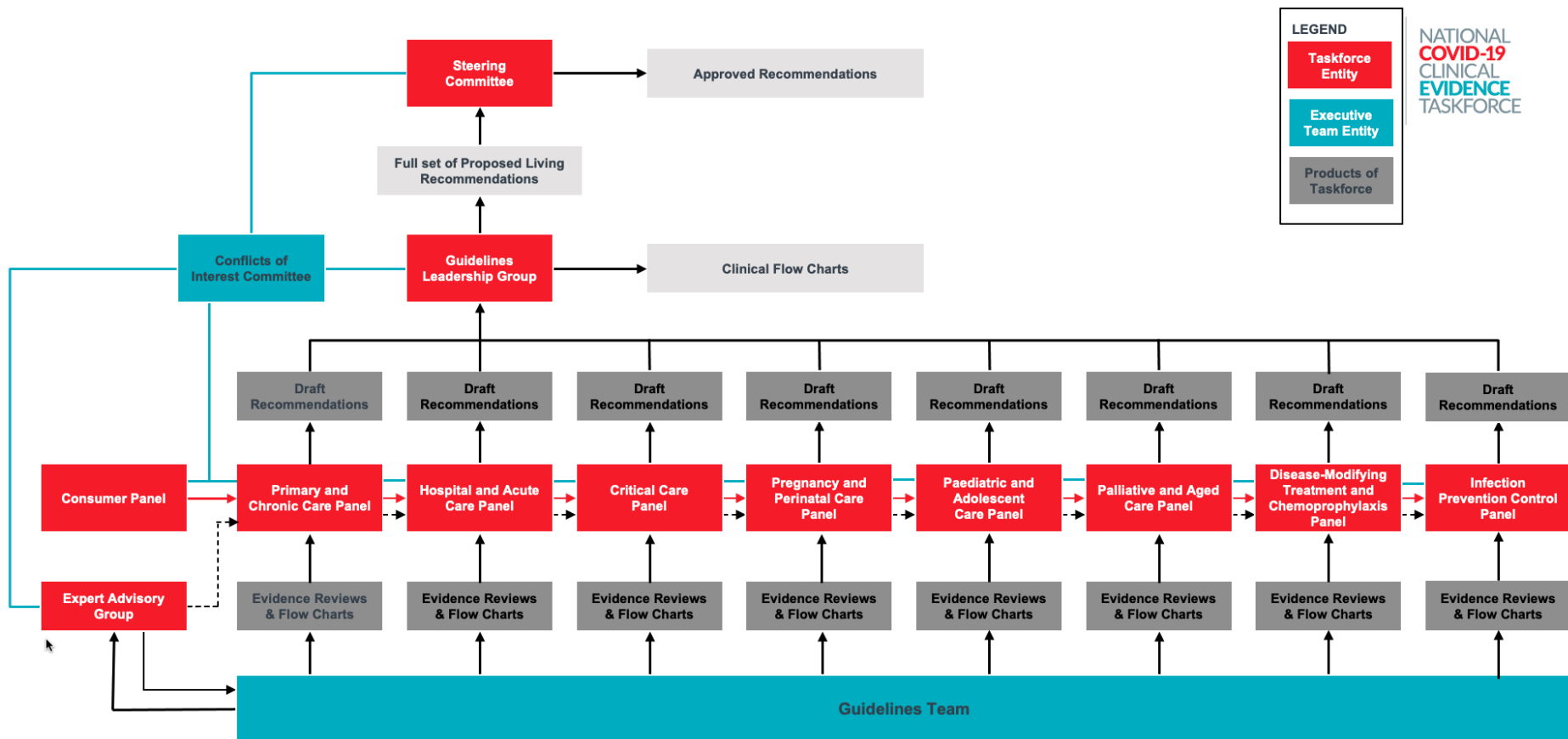


Figure 1. National COVID-19 Clinical Evidence Taskforce organisational structure. Detailed information is available at <https://covid19evidence.net.au/about-the-taskforce>.

**Table 1. Overarching principles on caring for children and adolescents in the context of COVID-19 adopted by the Paediatric and Adolescent Care Panel**

---

The Taskforce regards children, adolescents and family-centred care indispensable in managing the health and wellbeing of children and adolescents and urges continuity of these services, with a particular focus on equity of access. We support efforts to ensure children and adolescents are able to remain in contact with parents, carers and families despite COVID-19, recognise this may require specific attention to infection control management practices and may involve adjunctive use of technology such as video-calling. Health facilities should have plans to manage these issues for children and adolescents. We endorse the approach and goals established by the United Nations Policy Brief: the impact of COVID-19 on children.<sup>1</sup>

Child-centred services include among others: schooling, nutrition programs, maternal and newborn care, immunisation services, sexual and reproductive health services, HIV treatment, mental health and psychosocial services, birth registration, community-based child protection programs, out-of-home care, and case management for children requiring supplementary personalised care, including those living with long-term medical conditions, disabilities and victims of abuse or family violence.<sup>1</sup> Particularly relevant for the Australian context is to ensure continuity of Aboriginal and Torres Strait Islander child and adolescent services.

---

## **Table 2. Disease-modifying treatment recommendations for children and adolescents: drugs recommended only in research**

---

Drugs recommended only in research

Do not use (any of the following list) for the treatment of COVID-19 outside of randomised controlled trials with appropriate ethical approval (GRADE: only in research recommendation):

- Anakinra
- Aprepitant
- Angiotensin II receptor agonist (C21)
- Baloxavir marboxil
- Bamlanivimab
- Bamlanivimab plus etesevimab
- Baricitinib
- Bromhexine hydrochloride
- Budesonide
- Camostat mesilate
- Chloroquine
- Combined metabolic activators
- CT-P59 monoclonal antibody
- Darunavir–cobicistat
- Dutasteride
- Enisamium
- Favipiravir
- Fluvoxamine
- Human mesenchymal stem cells
- Intravenous immunoglobulin
- Intravenous immunoglobulin plus methylprednisolone
- Interferon- $\beta$ -1a (inhaled)
- Interferon- $\beta$ -1b
- Interferon- $\gamma$
- Interferon- $\kappa$  plus trefoil factor 2
- Ivermectin
- Ivermectin plus doxycycline
- Lenzilumab
- Nitazoxanide
- N-acetylcysteine
- Peginterferon- $\lambda$
- Recombinant human granulocyte colony-stimulating factor
- REGEN-COV
- Ruxolitinib
- Sarilumab
- Sofosbuvir–daclatasvir
- Sotrovimab
- Sulodexide
- Telmisartan
- Tofacitinib
- Triazavirin
- Umifenovir
- Vitamin C
- Vitamin D analogues (calcifediol/cholecalciferol)
- Zinc

These treatments have typically been evaluated in one or two trials with a small number of adult participants and with no children included, resulting in low or very low certainty evidence from which no conclusions can be drawn. The Taskforce therefore recommends that these treatments should not be used outside of randomised trials, with emphasis on trials enrolling special populations including children and adolescents

---

**Table 3. Paediatric inflammatory multisystem syndrome (PIMS-TS) definition adapted from the UK Royal College of Paediatrics and Child Health guidance statement<sup>2</sup>**

---

A child presenting with persistent fever, inflammation (neutrophilia, elevated CRP and lymphopenia) and evidence of single or multi-organ dysfunction (shock, cardiac, respiratory, renal, gastrointestinal or neurological disorder) with additional features. This may include children fulfilling full or partial criteria for Kawasaki disease

Exclusion of any other microbial cause, including bacterial sepsis, staphylococcal or streptococcal shock syndromes, infections associated with myocarditis such as enterovirus (waiting for results of these investigations should not delay seeking expert advice)

SARS-CoV-2 PCR testing may be positive or negative. All stable children should be discussed as soon as possible with specialist services to ensure prompt treatment (paediatric infectious disease/cardiology/rheumatology). There should be a low threshold for referral to paediatric intensive care using normal pathways

Additional features include:

- clinical
  - ▶ all: persistent fever > 38.5°C
  - ▶ most: oxygen requirement, hypotension
  - ▶ some: abdominal pain, confusion, conjunctivitis, cough, diarrhoea, headache, lymphadenopathy, mucus membrane changes, neck swelling, rash, respiratory symptoms, sore throat, swollen hands and feet, syncope, vomiting
- imaging and electrocardiogram (ECG)
  - ▶ echocardiogram and ECG: myocarditis, valvulitis, pericardial effusion, coronary artery dilatation
  - ▶ chest x-ray: patchy symmetrical infiltrates, pleural effusion
  - ▶ abdominal ultrasound scan: colitis, ileitis, lymphadenopathy, ascites, hepatosplenomegaly
  - ▶ computed tomography scan of the chest: same as for chest x-ray — it may demonstrate coronary artery abnormalities if done with contrast
- laboratory
  - ▶ all: abnormal fibrinogen, absence of potential causative organisms (other than SARS-CoV-2), high CRP, high D-dimers, high ferritin, hypoalbuminaemia, lymphopaenia, neutrophilia in most (normal neutrophils in some)
  - ▶ some: acute kidney injury, anaemia, coagulopathy, high IL-10 (if available),\* high IL-6 (if available),\* neutrophilia, proteinuria, raised creatine kinase, raised lactic acid dehydrogenase, raised triglycerides, raised troponin, thrombocytopenia, transaminitis

---

CRP = C-reactive protein; CT = computed tomography; ECG = electrocardiogram; IL = interleukin; PCR = polymerase chain reaction; PIMS-TS = paediatric inflammatory multisystem syndrome; SARS-CoV-2 = severe acute respiratory syndrome coronavirus 2. \* These assays are not widely available. CRP can be used as a surrogate marker for IL-6.

## References

1. National COVID-19 Clinical Evidence Taskforce. About the taskforce. <https://covid19evidence.net.au/about-the-taskforce/> (viewed May 2021).
2. World Health Organization. Multisystem inflammatory syndrome in children and adolescents with COVID-19: scientific brief, 15 May 2020. <https://apps.who.int/iris/handle/10665/332095> (viewed May 2021).